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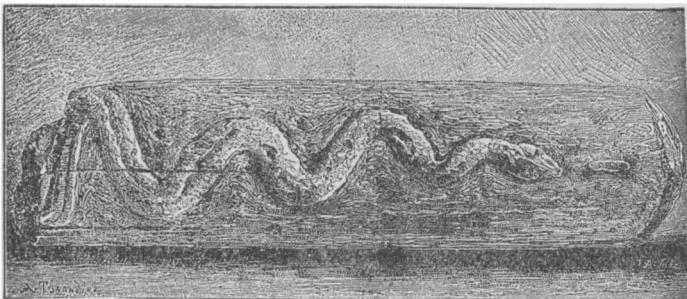
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26. *Bouteloua curtipendula*, Gray, is *B. racemosa*, Lagasca.
27. *Dactyloctenium Aegyptiacum*, Willd., is now *Eleusine Aegyptiaca*, Pers.
28. *Leptochloa*, P. B., in North America is limited to *L. mucronata*, Kunth.
29. *Triodia*, Br., includes *Uralepis* and *Windsoria* of Nuttall and *Tricuspidis* of Beauvois.
30. *Diplachne*, Beauv., is separated from *Leptochloa*, and includes our *L. fascicularis*, Gray, *L. dubia*, Nees., etc.
31. *Uralepis cornuta*, Ell., and *Uralepis purpurea*, Nutt., are now species of *Triplasis*, P. B.
32. *Stenochloa* of Nuttall is *Dissanthelium* of Trinius.
33. *Catabrosa*, Beauv., is limited to *C. aquatica*, Beauv.
34. *Lophochlaena*, Nees., is made a synonym of *Pleuropogon*, Br.
35. *Brizopyrum*, Link, is now restricted to a few African species. The American grasses which have been included in this genus are now separated under *Distichlis*, Rafinesque.
36. *Atropis*, Rupr., raised to the rank of a genus in the Botany of California, forms a section under *Glyceria*.
37. *Ceratochloa*, DC., separated from *Bromus* in the Botany of California, is again referred to that genus, forming the fourth section.
38. *Agropyrum*, Gaertn., includes *A. repens*, *A. junceum*, *A. caninum*, etc., the genus *Triticum* being restricted to the cultivated wheats, on the one hand, but made to embrace the species of *Aegilops* on the other.
39. *Elymus Europaeus*, Lin., is *Hordeum sylvaticum*, Huds.
40. *Asprella*, Willd., has precedence, from priority, over *Gymnostachyum*.

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F. LAMSON SCRIBNER.

Some Phenomena connected with the Cambium-Layer.—The accompanying cut, which we borrow from our French cotemporary *La Nature*, illustrates a singular instance of what the young wood-cells constituting the cambium-layer are capable of accomplishing when a foreign organism chances to be introduced into their midst.



The object represented is a small Brazilian reptile—the jaracaca—which was found within the trunk of an ipé-mirim, a tree of common occurrence in the province of Matto Grosso, to the north of the

Amazons, where the specimen was discovered.' The piece of wood containing the reptile, after an examination by the scientists of Rio de Janeiro, was taken to France by Mr. Lopes Netto (Brazilian Minister to the United States) and placed in the hands of Mr. Louis Olivier, who, after a careful study of the specimen, submitted the results thereof to the Botanical Society of France.

"What is astonishing," says Mr. Olivier, in an article on the subject in *La Nature*, "is that the entire body of the snake is lignified,* the anatomical study that I have made of it having shown me that it consists of cells and fibres like those of the secondary wood which surrounds it. It is impossible to explain the fact by saying that there has occurred a formation of these elements in a hollow, which, having been traversed by the animal, has preserved the form of the latter; for on the piece of wood it is not only the contour of the snake that is visible, but, indeed, the whole relief of its body."

Just beyond the head there is likewise observed in relief a small cylinder which appears to represent the larva of an insect. It seems, then, that the snake, in pursuing the latter into a fissure in the tree, has insinuated itself between the wood and the bark into the cambium-layer, which is well known to be the generator of wood and secondary liber. The function of this cambium-tissue is twofold; in the interior it gives rise, in a centripetal direction, to ligneous elements, the youngest of which are consequently found at periphery of the wood; but toward the exterior, on the contrary, it produces, in a centrifugal direction, liber fibres, elongated cells, and prosenchymatous elements, the youngest of which are therefore situated on the internal surface of the bark. If, then, a foreign body be introduced as far as the external limit of the wood, it will, in a few years, become invested with a series of ligneous layers, which are themselves protected by an abundance of bark. Now, in the case under consideration, not only has there been an investment of concentric zones around the reptile, but, besides this, cells and ligneous fibres derived from the cambium-tissues have been substituted for the elements which constituted the external portions of the snake in measure as these have become absorbed. The places that these occupied have, as they gradually disappeared, been taken by secondary wood, whose hypertrophy is proved by the very relief of the snake's body."

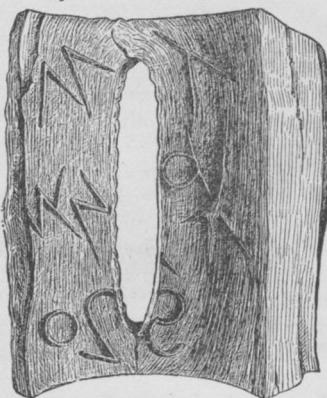
The result, as in cases of petrifaction, is that in some parts of the body certain delicate details of the animal's organization are clearly visible. This is especially the case with regard to the nostrils and orbits, and to the arrangement of the scales and cephalic plates over the entire half of the surface of the head.†

In connection with this subject Mr. Olivier makes the following statement to further illustrate some of the phenomena connected with the cambium-layer: "About ten years ago a forest was cut down near Elbeuf, one of the trees of which had been a long time before

* Except the centre, in which are found the constituent elements of the animal.

† These details are not shown in our cut, which represents the snake about one-third the natural size.

marked with the letter 'B' to indicate a boundary. This mark had been made, according to custom, with a red-hot iron, which had penetrated the tree to some depth. When the tree was chopped up the mark was still very prominent on the surface of the bark. A blow of the axe given by the woodman parallel with the axis of the trunk, in the external region of the 'sap-wood,' revealed two absolutely plain surfaces, neither of which bore a trace of the letter; but, a second cut, made a little further toward the centre, brought to light a mark 'B' identical with the one presented by the surface of the bark itself." We omit the engraving furnished by Mr. Olivier to illustrate this case, and substitute therefor a cut showing (one-fifth the natural size), an analogous example which was exhibited by Mr. J. D. Hyatt at the September meeting of the Torrey Club. Mr. Hyatt stated that the specimen shown was obtained by Mr. E. C. Morrison in the northern part of Michigan, while making a survey last winter for a railway whose route lay through a section of country entirely covered with forest. During the progress of his work Mr. Morrison frequently found it necessary to verify certain points of the survey by hunting up the trees showing the nearly obliterated scars made by the Government surveyors many years ago in dividing the country up into townships or "sections." Upon removing the wood-growth which covered the "blaze" made by these surveyors, he found the record in most cases perfectly preserved, while the figures and letters, from being filled in by young wood-cells, were exactly copied in relief (as shown in the cut) upon the inner surface of the succeeding annual layer.



The specimen figured, which was taken from a hemlock, does not exhibit a complete record, inasmuch as the entire surface of the "blaze" has not been covered by new wood; but Mr. Morrison obtained other examples in which the record was perfect, the date revealed being 1842, and the layers of growth corresponding exactly with the number of years which has since elapsed.

Floral Proliferation in Gratiola.—Mr. E. S. Wheeler has sent us from Berlin, Mass., a number of specimens of *Gratiola aurea*, which have regular flowers, with from two to three corollas enclosed one within the other after the manner of those of the "hose in hose" variety of the primrose (*Primula acaulis*). In some cases the innermost corolla is tubular like the outer ones, but in others it is polypetalous. A vertical section of the flowers shows that the multiplication of the parts is due to median proliferation. Dr. Masters (Vegetable Teratology) gives Scrophulariaceae as one of the orders in which this sort of change is apt to occur.

Mr. Wheeler remarks that in the locality where these specimens were found no flowers were observed last year, and but few this, the plants having been kept cropped by cattle.